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Combat Crew

strategic air command

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Combat Crew

Magazine of the Strategic Air Command - 31st Year of Publication

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ON OUR COVER

A salute to the 171st Air Refueling Wing, a fine outfit from the Penn State National Guard. Their safety record and dedication is typical of all our ANG and Reserve units.

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COMBAT CREW is an internal publication of the Strategic Air Command with the sole purpose of promoting safety. The contents of this magazine are informative and not to be considered as directive in nature. Facts, testimony and conclusions of all mishaps printed herein may not be construed as incrimination under Article 31 of the Uniform Code of Military Justice. All names, dates and places used in conjunction with mishap stories are fictitious. Written permission must be obtained from Headquarters, Strategic Air Command, before any material may be reprinted by other than U.S. Air Force organizations. Use of funds for printing the publication has been approved by Hq. USAF, Distribution FX, controlled by IGFC. SAC units submit distribution requests through local PDO. Reader to copy ratio 9:1.

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Maj Gen Andrew Pringle, Jr.
DCS/Operations, SAC

Why do we train the way we do? Simply—it is our job to be better than the enemy. Some believe more and better equipment is all that is needed to have an effective fighting force. Often overlooked is the key element of a fighting force—the individual who operates the equipment. The individual must be able to extract the full capability of the equipment in order to beat the enemy in his machine. This is why we train hard, why we train often, and why we train the way we will fight.

Combat is not the time to be surprised by a lack of ability, endurance, or proficiency. Just as athletes continually practice to be winners, so must crew members continually practice to be winners. Unlike the athlete, however, we can't afford to lose. The stakes are too high. The bet on our game could be our way of life.

This leads to a fundamental truth that applies to everything we do. The more we practice something, the better we get. Translated into the military flying business this principle reads, "The more you fly the more proficient you get." There are two corollaries to this principle: (1) The more often you fly, the more proficient you will stay, and (2) the more you fly the way you must fight, the better you will be in combat. We have applied these principles to the SAC Aircrew Training Program.

It would be ideal if we could fly more, but scarce flying hours, manpower, and budget resources limit our ability to fully employ this principle. Nevertheless, we have taken steps to maximize the use of the flying hours we do have. First, we have put the emphasis back on flying—where it should be. To do this, the responsibility for flying and training has been shifted to the tactical flying squadron. We have beefed up the squadron training flight, given the flight commanders a job, and given the squadron commander the responsibility for the training function. These organizational changes are intended to give the squadrons more flexibility to tailor training to the individual. I challenge the tactical squadrons to grab this opportunity to build a top-notch training program for your crew members. The ball is in your court.

TRAIN THE WAY WE FIGHT

We took another step to increase training. More emphasis is now placed on low altitude penetration and weapon delivery tactics for the bomber types. Improvement was needed in this primary tactic to be able to fly lower, to fly faster, and to bomb better. We had to shape up our low level capability to take on improved enemy defenses by increasing the number of bomb runs and low levels, and adding diversified low level training. To offset increases in these areas, high altitude navigation requirements were reduced and celestial navigation training was diverted to less expensive T-43s and the celestial training device. The concentrated low altitude training is paying off. A recent 1 CEVG analysis of command bombing results shows a significant decrease in bombing circular error probability (CEP) and greater bombing reliability. We're also working to improve the probability of getting to the target by increasing TA/TFR training and doing it more at night. This will improve the crew's proficiency and increase confidence in the equipment.

You'll recall the first corollary to the "fly more" principle is to fly more often. The idea is to avoid large declines in the "learning curve" by flying more sorties in a given time frame but shorter in duration. If it were possible, flying a short sortie every duty day would be optimum frequency. But again, the nature of the SAC mission, TDY commitments, and alert duty are constraints that force us to make best use of time and assets remaining.

Out of these constraints the cold seat swap (CSS) was born. This enabled us to generate the needed additional sorties for all aircraft within existing flying hour and maintenance manpower resources. It is important to recognize the purpose of the cold seat swap is to produce additional, productive sorties. The CSS is a management tool to get the job done, not a goal. More sorties for the sake of numbers is not the objective and does not help.

The other corollary to the "fly more" principle is fly the way we fight. The recent dramatic revitalization of the SAC training philosophy has taken training to "where the action is." SAC is now a participator in a wide variety of exercises that test our combat readiness to the fullest extent possible in peacetime.

It started at RED FLAG. This exercise has given us a place to "go low and go fast." New tactics as well as traditional ones can be practiced safely in conjunction with all the associated threats and aggressors. RED FLAG has made SAC more aggressive and modernized our thinking. Who would have given much thought three years ago to comm jamming, terrian masking, tight time control, mutual support, evasive action, or contingency cell tactics? We are continuing work to incorporate lessons learned and provide further exercise diversity such as MAPLE FLAG.

SAC forces are actively supporting and participating in joint military exercises all around the world. The B-52Ds are active in exercises such as COLD FIRE, BUSY BREWER, and DAWN PATROL, all exercises in the European and NATO theaters. TEAM SPIRIT is a JCS-directed, CINCPAC-sponsored exercise in Korea. We flew GALLANT EAGLE 80 and BOLD EAGLE 80, both REDCOM exercises employing non-nuclear tactics. All to train the way we fight.

These exercises, however, are just part of the job. We must be able to deploy immediately to where the fight is. The H-model units got a good dose of this type training in BUSY LEAGUE/BUSY ISLAND, the B-52H unit deployments to Andersen. But crew members weren't the only ones training in this exercise. The entire staff and support functions went to school. No combat mission can be successful without the support of the people on the ground directing, planning, loading, fixing, launching, and just plain working hard. The deployment to Andersen and in-theater contingency training helped us attain deployment experience rapidly and effectively.

These exercises and the many recent training changes have made the job more demanding. Training is event oriented to enable you to operate the weapons system in every mode of its capability. Within the constraints of peacetime safety, environmental consideration, and resource availability, routes and areas have been allocated to practice EWO and contingency tactics. The job is not done yet. We are working to get airspace where you can train at wartime parameters.

So what does this all mean? It means we are training harder and better than ever before. It means we must continue efforts to improve training and to make training more realistic. But most importantly, it means you have accepted the challenge to be part of the dedicated team of professionals ready to fight if required. I commend each crew member and each of the men and women who support the SAC readiness effort for willingly accepting this tough and often thankless job. Because of your efforts, we are ready to play our game. Just as the great athlete works and sacrifices to be a winner, so have you. Our bet is on you.★★

FOOTNOTE: Although this article deals primarily with SAC's flying crew members, the same principles also apply to missile crew training. In the next issue of *COMBAT CREW* we will address this training philosophy as it relates to missile crew members.

Tales of a Wing

Lt Jolan F. Silver
171st AREFW

It's a day like so many days as members of the 171st Air Refueling Wing arrive at the Pennsylvania Air National Guard base at Greater Pittsburgh International Airport. On the little military apron of the busy airport, as the wing stretches and settles into its morning routine, there is an attitude in the air. An attitude of professionalism and of getting the job done right . . . an attitude that has led to over 25 years and 83,200 hours of flying without a Class A mishap.

The Pittsburgh fog is slow to lift. In a corner of the ramp an airplane and its equipment stand ready as its crew gives the alert airplane its morning check. Surrounding them are people working hard on what has become a sharp-looking modern base. But this was not

always the case.

The 171st had its beginnings at a small aerodrome in Corapolis about 12 miles west of Pittsburgh. It was activated in May 1946 as the 146th Fighter Squadron under the 53d Wing in Harrisburg. The first inspection saw 19 officers, 12 airmen, and no aircraft. The unit struggled and grew and in 1949 a second squadron, the 147th was added. Both units trained intensively in preparation for their first aircraft, the P-47. Even the lack of hangars, which were not built until 1950, failed to dim the enthusiasm of the young wing. Maintenance was often performed at the mercy of the weather on a ramp that alternated between mud and dust in the summer. Tools from home were often used since Air Force issue tools were not readily available.

The two fighter squadrons grew, new facilities were added and in 1951 the squadrons transitioned into the P-51s. Many fond memories are still held about the powerful Mustangs flown in the interceptor role. The F-84F followed and with it reassignment to the 26th AD, Air Defense Command. In late 1957, the 84s were exchanged for F-86Ls. The two units soon separated when the 146th traded its 86s for the dashing F-102 Interceptor.

Shortly thereafter the maturing 147th underwent a transition which would reshape its character for many years to come. The unit received the C-119J and became part of the Military Air Transport Service, launching it into multiengine multi-crewed aircraft. It continued growing and meeting more

MSgt Martin, Alert Crew Chief, readying alert aircraft.

challenges and became the 171st Air Transport Group flying the long range C-121G Super Constellation. In only one year the Group expanded into a wing with a secondary mission of aeromedical evacuation. This secondary mission became primary when the unit was redesignated the 171st Aeromedical Airlift Wing flying medevac missions to distant spots like Alaska, Goose Bay, Puerto Rico, Cuba, the Canal Zone, and Bermuda. Under this designation the 171st saw its only full mobilization on 13 May 1968. The mobilization continued until December 1968 and included 510 missions in the eastern two-thirds of the CONUS. During this period, the 1st earned its second AF Outstanding Unit Award. In the course of two years the unit flew 748 medevac missions involving 8,710 accident free flying hours while moving almost 17,000 patients.

1971 was a big year for the 171st. The wing captured the 10-Year Flying Safety Award and achieved a 99% reliability rate in Creek Guardlift at Torrejon, Spain. The purpose of Creek Guardlift was to provide ANG peacetime airlift augmentation to USAFE to accomplish intratheatre airlift and provide an opportunity to train in Europe. This mission brought the third AF Outstanding Unit Award to the 171st.

The next year was even bigger as the 171st launched into the mission that would stay with it until today: air refueling. The 171st was assigned the KC-97L Stratotanker. This powerful aircraft with its four huge reciprocating and two jet engines was popular with aircrews but a nightmare to maintenance personnel. Crewmembers quickly learned the intricacies of aerial refueling and participated in operations like Creek Party, an all-Guard operation in Germany that provided air refueling support for European based fighters aircraft. The unit learned the joys and challenges of flying the cumbersome KC-97 back and forth to Europe by way of Keflavik and Goose Bay with their icy runways and blustering crosswinds. After completing nine deployments encompassing 202 sorties, 1,109 wet hook-ups, offloading 4,133,000 pounds of JP-4 and 2,091 accident-free flying hours, the 171st was awarded its fourth AF Outstanding Unit Award.

With all of the lessons learned from the 97, the 171st was ready for its next challenge: the KC-135 and the SAC refueling mission. New aircraft began arriving in May of 1977. By the end of the year, eight aircrews were mission ready. Just six months later, 171st started an activity that has kept an airplane, crew, and equipment standing ready to launch: SAC's SIOP Alert. Many changes, both within the unit and without, have molded the unit into the

L-R: Sgt Jerry Beer, 171 ARW OPS Control Technician. MSgt Mike Athanas 171 ARW OPS Control Center Supervisor.

L-R: MSgt Charles Zimmerman - IBO, Ground Training Monitor; SSgt Diane Stawecki, Air OPS Technician; Maj Andrew Holko, Director of Training, Flight Instructor.

strong and healthy organization it is today. Just what gives the 171st its strength, flexibility, and readiness to accept the next challenge? Its lifeblood—its people. The people in the 171st are like most in the Guard, a combination of veterans, professionals, and young recruits. They don't see part-time training as a detriment, but view it as an opportunity for nonmilitary experience to add to military capability.

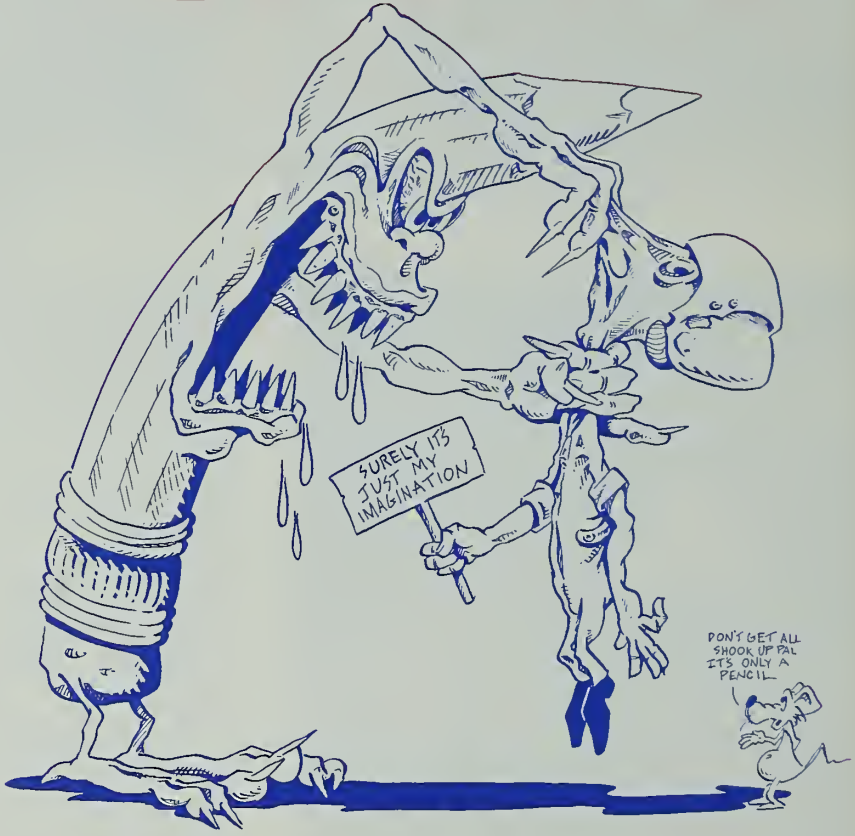
A strong sense of mission permeates the activities of the unit. This attitude kept the 171st functioning while significant renovations were performed on the physical facilities. In the past six years, the nose dock, AGE building, engine repair shop, fuel storage facility, ops building, warehouse, and avionics shop have been added or remodeled. Much of the construction involved major portions of the ramp area, but a conscientious FOD program prevented any serious problems. This kind of attitude typifies the men and women of the 171st. During 1971, when the Air Force was unable to provide airlift support to the wives of Vietnam POWs, the unit participated in Coin Assist, which took the wives from various parts of CONUS to Washington, D. C. for recurrent meetings and briefings. Perhaps the attitude about the KC-135 best describes our close-knit Pittsburgh unit. **We want it.** That sums up our

Continued on Page 24

L-R: SMsgt Lloyd Hughes 171 CAM SQ Phase Dock Chief, CMSgt Joseph Abby Org Maint Branch Chief, John Lhota Chief Quality Control.

Sgt Perkins, 171 CAM SQ Lox Service.

DIAGNOSIS: CHECKITIS


SURELY IT'S JUST MY IMAGINATION
DON'T GET ALL SHOOK UP PAL IT'S ONLY A PENCIL

Capt Reginald L. Lipp
379th BMW, Wurtsmith AFB

Lieutenant Lahm had flown just two days before. It had been a good mission, but today things were different. In the left seat this time was an evaluator. The Lieutenant noticed his hands shaking slightly as he applied full power. "Good takeoff," he thought to himself, "or did I miss something?" He looked over to his left. The evaluator said nothing. "He knows that I can do it," Lahm said silently, "so why must we go through this?"

When the flight was finally over that October 28th, the Lieutenant had completed his check. He knew he could fly better than he had shown, but—it was done. He had passed. It was October, 1909, and the evaluator was Wilbur Wright. Lieutenant Frank P. Lahm was the first certified Air Force aviator.

We cannot be sure the Lieutenant knew what he was starting with that first "checkride," but you know he must have been nervous about it. Many things may have changed, but being uptight about checkrides is still with us. As a matter of fact, we have coined a word for it: checkitis.

checkitis (chek-i-tis) N. 1. The act of making stupid unusual or even dangerous mistakes before, during and after a flight when an evaluator is present. 2. A condition in which the brain fogs over, hands shake, and speech becomes unclear to others. 3. The cause of abnormal performance, out of character decisions, and irrational actions. 4. A temporary disease of the mind, lasting 24 to 36 hours, usually ending after an evaluator is permanently removed from sight.

If you haven't had checkitis, you just don't fly airplanes. It is a disease that all avaiators at one time or another suffer. To some, it may at times seem almost fatal, yet to others it has become nothing more than a slight irritant. Unfortunately, one's experience or exposure does not necessarily lead to a cure or immunity. Some of us put up with this aeronautical virus year after year, just barely stumbling through those annual and no-notice checks and feeling that it is one of those few evils of flying. What can we do about checkitis? Is there a cure?

Yes, there is. It can be prevented. But before we can save ourselves from this bumbling disease we must eliminate the climate in which it can grow. There is a common myth, or reality in some cases, that there are two separate ways to fly airplanes. One way if you are by yourself and another more complicated and annoying method when Stan Eval is on board.

Too often we hear "If this was a checkride, I'd do it this way, but . . ." Strangely, we always remember to do whatever we normally don't do, but no one can ever believe some of the dumb things that we forget while remembering. This paradox not only leads to checkitis but can be dangerous. If you are going to prevent the ailment you must have confidence in how you fly or navigate the airplane. The solution? Fly the airplane the right way all the time.

A second part for the prevention of checkitis is knowledge. Know the flight mission profile well. Have a clear, predetermined alternate plan if things do not go as briefed—do they ever on a checkride? Know your fellow crewmembers. Talk over what you expect from them. Know the airplane. Not only from the Dash One side but the individual airframe, itself. What's its recent maintenance history? Finally, but most important, know your checkride profile. Review the governing regulations and grading criteria. Talk with your evaluator, ideally even before mission planning. Design the mission for your check.

Now it is time to go fly. You know that your procedures are by the book. There are no questions in your mind about the flight. Everything is ready. You even shined your boots this morning. Can you still have checkitis? You bet.

You didn't order a flight lunch because it is a checkride. Who's going to have time to eat, you rationalize to yourself. Besides, if the evaluator sees me eating he'll know that I must have forgot something. Dumb! Cold cereal and black coffee were not meant to keep a body going for 12 hours.

At base ops you brief five possible approaches to your alternate, but just gloss over your filed flight plan clearance, missing a 100 NM error. During preflight you find yourself checking each landing gear wheel nut for tightness, but walk right by that streamered down-lock that the crew chief forgot. You started the day an extra hour early because it was your checkride and now you're 10 minutes late for engine start. Airborne, you decide to do an enroute penetration instead of the prebriefed ILS/VOR approach.

You elect to try something new that you read in the latest flying magazines. If it works it ought to really impress the evaluator. What's going on? Checkitis!

This ailment has two distinct symptoms. Recognize them early enough and maybe we can save the patient. First, there is the elephant-ant syndrome. We have all seen this. Paying so much attention to detail that we miss the important things. Remember the down-lock? Ask yourself, "Am I doing more than is required?" "Are we overbriefing?" "Should I really recheck that again?" The mind can handle only so much. If suddenly you put a bunch of new demands on the old brain, especially when it comes to trivia, important things somehow always get pushed aside or even forgotten. Don't let yourself get "run over by the elephants while stomping on the ants." Prevent checkitis. Follow your set normal flight routine.

Our second symptom of oncoming checkitis is the seldom discussed "Ace of Aces" syndrome. In order to do well on a checkride we feel we must go out and really impress the evaluator. "Watch me water his eyes with this one," we say to ourselves. Or worse yet; "Take it around, nah, I can save it." Believe me, the evaluator will be sufficiently impressed if you can fly a sane well executed and safe mission. Doing the unusual only invites a closer look. Don't try to prove what a great aviator you are.

The final cure for checkitis is relaxed self-confidence. You know your flight duties, the airplane and the mission. Why shouldn't you do well? If you find yourself getting nervous and rushed, slow down. Take a break. You're working too hard if you cannot pause for a moment. Let the other guy fly it for a while, even if it is the evaluator. Delay the descent to let the other crewmembers catch up with you. Let the pilot assume naviagation when home station locks on if it's a navigator's check. A cup of water and chance to stretch one's limbs can do wonders in helping the ailment to go away.

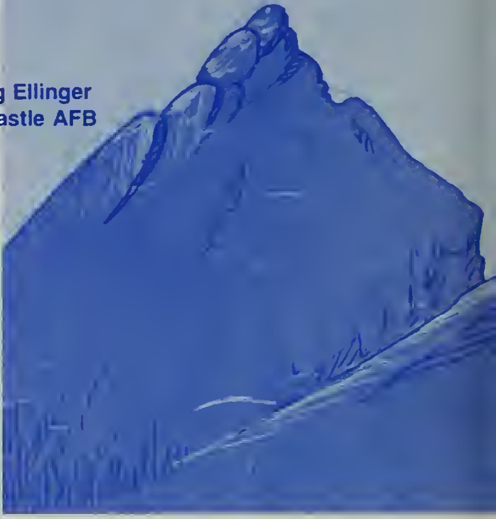
Most of us fly for the challenge. A checkride shouldn't be different. It is a chance to show yourself and others that you can do the job, do it both professionally and safely. The ailment has been with us since that first stan eval check back in 1909. Just remember that it is there, learn to limit its growing climate, and combat it when it first appears. Only you can save yourself from checkitis.

Thank goodness, it only last from 24 to 36 hours.

LET'S TALK TA/EVS

PART

Maj J. Doug Ellinger
93 BMW, Castle AFB



In part one of our TA/EVS discussions in May, we looked at problems and some techniques for flying the low level route to the IP.

Now let's look at some bombing techniques using TA/EVS.

Bombing

Have you ever been flying a super TA/EVS leg and have things start to suffer when you get to the IP and complicate the crosscheck with bombing information? Try using the EVS monitor for as much of your bomb run crosscheck as possible. Because of the accuracy limitations of various readouts we can't use the EVS display as a primary reference (airspeed is the worst culprit), but the monitor can put together all the information needed to make an excellent bomb run. At the IP, on your desired true airspeed, note the indicated airspeed on the EVS, then fly that figure through the run. If your altitude changes significantly you may have to get a new indicated airspeed figure to use. You could even manage power yourself allowing the copilot to devote more attention to bombing. Except for the 60-second time-to-go (TTG) call, these calls are only used for bomb run pacing, so make them off the EVS TTG readout and get the 60-second call off the primary FCI. The EVS heading error indicator is a fairly accurate duplication of the FCI even though there's no scale. Experience can condition you to learn relative deflections and the need for correspondingly aggressive centering. So there you have it; heading, radar, altitude, airspeed, the TA/EVS bomb run. Try it next time.

Night TA/EVS

Some time ago, the 93BMW Stan/EVAL Division and 1 CEVG were tasked to evaluate the feasibility of night TA/EVS in mountainous terrain. Several missions were flown in various weather and light conditions, several recommendations were forwarded concerning techniques and precautions. Not all were adopted and passed to the units in implementing messages, so I will cover those items not mentioned elsewhere as restrictions to night TA/EVS operations. Where appropriate, reasons for each item are included. Consider each for its positive impact on safety and your TA/EVS training.

Avoid night mountainous TA/EVS during twilight, not so much for TA reliability, but because of the safety monitor functions that are impaired in these light conditions. Neither the eyes nor the STV can resolve foreground terrain when the sky on the horizon is twilight. If you are in this situation, though, try using low contrast on the monitor and switch to FLIR. It may help. Also, with twilight conditions on a high horizon be aware that there may be intermediate high terrain between the aircraft and the horizon that is not an obvious part of the horizon. It may be impossible to see it.

As mentioned earlier, sweep-to-sweep trend information from the TA trace is a valuable resource and should be used to the fullest. During night operations, it was nearly impossible in some light conditions for the pilot flying the aircraft to leave the monitor and take up safety monitor duties. The trace was so bright and could not be turned down, even with the intensity control. Transitioning to outside sighting was difficult. Therefore, one pilot should plan to fly the entire TA/EVS leg. This will allow full attention to the monitor and the ability to watch for rising terrain indicated by a sweep-to-sweep trend.

Avoid the use of Profile 3 until you gain experience in night TA/EVS flight. Profile 6 will provide an additional safety margin during night operations and still allow challenging practice. Once you have identified an isolated piece of high terrain that must be crossed, though, select Profile 3 when within range to

WELL, LT FUDDLEBUTT NOW DO YA WANT TO TALK? HUH?.... DO YA?
PUOT

provide a trace to the nearer minimum range associated with Profile 3.

I recommend that the navigator annotate the highest terrain or obstruction for each route segment and then brief this information to the crew at each action point of the route. It only takes a few moments and its contribution to flight safety is considerable.

I recommend using the EVS monitor crosscheck for night TA/EVS bomb runs as described in the previous section. Consolidating the instrument crosscheck at night will give the pilot more seconds out of every minute to devote to the TA trace.

During night TA/EVS operations confine your rate of descent from high terrain to 1500 fpm or less until you have perfected your technique in this phase of flight.

Consider not smoking and the use of 100% oxygen for the pilot, copilot and safety observer. The physiological effects of altitudes as low as 5000 feet will reduce night vision somewhat. Again, for safety's sake, play with a full deck and use oxygen.

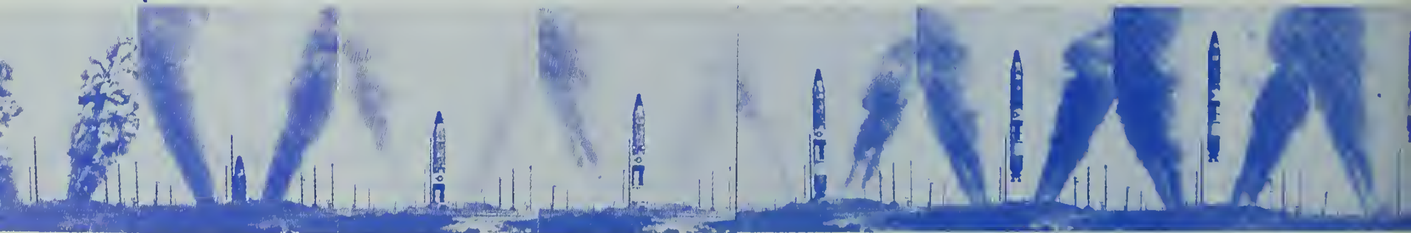
As with any low level operation, but especially at night, when any distraction occurs, or any restriction to visibility is present, climb immediately to the IFR altitude before dealing with the problem. Do not permit any other activity to interfere with radar terrain assessment or TA/EVS display monitoring. Whenever the pilot flying the aircraft cannot devote undivided attention to the TA/EVS display, or has any doubt about the reliability of equipment or position, a climb to IFR altitude is in order.

Lastly, I found that night mountainous TA/EVS was the most difficult, physically and mentally demanding, and an exhilarating activity. It taxes your systems knowledge and crew coordination abilities to the limit, but with practice it will contribute immensely to your TA/EVS confidence. Give it an honest try when the conditions are right, and you'll be pleased with the results.

Read and study the TA/EVS techniques and see if you can use them for yourself, but don't knock them till you've tried them. See how they feel your next time at low level, and if you come up with any more techniques, share them with the rest of us. Be aggressive, but be safe, and let's go "do it in the dirt."

After the announcement that the best missile wing in SAC and Blanchard Trophy winner is the 381st SMW, team members jump to proclaim that they are the "Best of the Best." McConnell won the 1980 Olympic Arena competition with a combined total score of 2,747 points. The 381st Communications Team was also named the best in the Titan II missile wings.

381ST SMW WINS
a close competition



IT was another year for the Titans at Olympic Arena. For the second consecutive year, a Titan missile wing won the annual SAC Missile combat competition and took the prestigous Blanchard trophy. The 381st SMW, McConnell AFB, after three days of tough competition between the nine wings, took the honors by amassing 2747 points out of a possible 3000. The McConnell competitors also won the Best Titan Munitions and Communications events.

The number two unit and Best Minuteman Wing was the 90th SMW, F E Warren AFB. They gathered 2700 points. In addition to their standing as top Minuteman wing, the F E Warren unit won awards for Best Minuteman Crew, Best Security Police Team, Best Minuteman Security Police Team, Air Force Association Trophy for Best Minuteman Operations and Best Single Crew Exercise.

The 321st SMW, Grand Forks AFB, finished third overall. There was a close race between the other two Titan wings for overall fourth and fifth places. Both the 308th and 390th SMW had a percentage of 88.9 but the 390th had 2668 points to the 308th's 2667. The 390th SMW also won the Best Maintenance, Best Titan Facilities Team, Best Titan Electronics Lab Team and the Air Force Logistics Command Trophy for Titan. The 308th SMW won Best Operations, Best Crew, Best Titan Crew, Best Titan Munitions Maintenance Team, Best Titan Security Police Team, Best Civil Engineering Team and the Air Force Association Trophy for Titan Operations.

The 44th SMW, Ellsworth AFB, won trophies for the Best Communications Team, Best Minuteman Communications Team and Best Minuteman Civil Engineering Team.

The 351st SMW, Whiteman AFB, took the awards for the Best Minuteman Mechanical Team and the Air Force Logistics Command Trophy for Minuteman Logistics.

381st SMW crew members Capt Barret J. Mammen, 1Lt. Steven J. Crawford, SSgt Thomas W. Oglesby and SSgt Albert J. Abbondanza posted a score of 279 points during their operations exercise which gave their wing a total operations score of 556 points and moved the 381st to an overall Olympic Arena victory.

During Olympic Arena '80 opening exercises the 91st SMW Mechanical team of SSgt Victoria L. Plourde and SrA Roger G. Buggert began competition against eight other missile wings as they performed maintenance on and repaired an elevator work cage assembly.

Commanders from missile wings competing for the Blanchard Trophy drew schedules for the Olympic Arena exercises. From the left are: Col Ralph E. Spraker, 351st; Col Gary E. Marsh, 308th; Col Charles H. Greenley, 90th; Col Robert J. Roetcisoender, 390th; Col Nathan Hartman, 321st; Col James L. Crouch, 341st; Col Richard Schoonmaker, 44th; Col Raymond H. Cleveland, 91st; and Col John E. Craig II, Deputy Commander for Operations, 381st SMW.

Communications experts SSgt Thomas A. Loggins and A1C Richard L Simmons from the 351st SMW, are tasked with a cable splicing exercis evaluated by MSgt George Braswell. The two members gained a score o 184 out of a possible 200 points to place them in a three way tie with th 381st SMW and the 90th SMW for second place during Olympic Arena '80.

The 341st SMW, Malmstrom AFB, walked away with trophies for the Best Minuteman Electro-Mechanical Team and Best Minuteman Missile Facilities Team. Only 189 points on a base of 3000, separated the first place winner from the last.

The 13th annual competition was held late in April with nine missile wings competing to determine the best in SAC. The meet was opened by Maj Gen Earl G. Peck, chief of staff. He stressed the great value of competitions to an audience of missileers and guests when he said: "All of us learn from competitions. This knowledge has forged improvements of technical data and procedures as well as leading to the development of new equipment and improvements in existing equipment.

"In the long run, I believe these competitions are the exercise of

308th SMW communications experts, SrA Jackie D. Shipley and A1C Gloria S. Stroz were evaluated by TSgt Bruce Miller as they performed an operations bench check on a radio maintenance network system during Olympic Arena '80.

The 321st SMW Operations team had one returning member from last year's Olympic Arena competition trying to duplicate the honor of best operations crew. The team of 1st Lt Michael D. Selva (foreground) and 1st Lt Raymond D. Michael Jr., last year's deputy commander, are evaluated by Capt Michael J. Kemp (left) and Capt Ronald C. Williams on the performance of their exercise.

excellence . . . your excellence is only partly the result of natural gifts. It is also, as everyone here recognizes, the result of a lot of hard work by many dedicated people. There are no, I repeat no losers.

"The weapon systems you represent are the most awesome force in the world today. Never before in history have there been weapons of such readiness, reliability and accuracy. But this hardware, by itself, is nothing but a maze of metal and electronics. A missile without a highly trained and competent crew makes little contribution to our defense. It is you, the combat crew, the maintenance, security, civil engineering and communications teams, who make the ICBM what it is, the centerpiece on the strategic triad."

Competition was intense throughout the meet and in the first day of exercises, the 90th SMW, took the lead by posting the highest composite operational crew, electro-mechanical, maintenance and security police scores. Their overall percentage total

Teams of competitors arrived for the missile competition. These missileers represented the 1979 winner, the 390th SMW Davis-Monthan AFB.

Munitions Team members from the 90th F.E. Warren AFB, perform an inspection and checkout on a Mark 12 re-entry vehicle as they are evaluated by MSgt Michael R. Knowllign. From left foreground: SrA Brian F. Walker, SrA Robert D. McGrew and Sgt Thomas C. Williams.

341st SMW team, Sgt Charles T. Crowe, Jr., A1C Douglas F. Spielman and Sgt Charles L. Foreman began their portion of competition with an inspection, check-out and build-up of a Minuteman Mark 11 re-entry vehicle.

Break-down, diagnosis and rebuilding of a Mark11 re-entry vehicle was accomplished by 44th SMW personnel: SrA Charles W. Young, Sgt Morris M. Sjoblom III and A1C Michael J. Skundberg. Their task was evaluated by TSgt Lewis H. Arnold and MSgt Darell R. Giles.

after the first day: 93.9

In the second place was the 381st SMW. This Titan wing had a composite percentage of 88.4. The 351st SMW followed closely with a 88.3 percent and their place in number two position among the Minuteman wings. The number two Titan wing at the end of the first day was the 308th SMW, Little Rock, with an 87.7 percent.

At the mid point, the 90th SMW still held onto the lead for the Blanchard Trophy. The F E Warren Minuteman competitors had tallied 1818 points. In second place, only .1 percent behind was the 381st SMW, McConnell Titan Wing.

The F E Warren wing retained its first place midway through the competition as their teams completed seven of the nine exercises. Other units with high percentages at the mid point of the competition were: 321st SMW, Grand Forks AFB, with an 89.2 and the 341st SMW, Malmstrom AFB, with an

88.5. Also in the Titan category was the 308th SMW, Little Rock AFB, with an 86.5 percentage. However, when the three-day event ended, it was the 381st, McConnell AFB, that was selected "Best of the Best" for 1980.

At the Olympic Arena awards ceremony, Gen Richard H. Ellis, CINCSAC, said:

"The final scores have been posted, the top winners determined and the time has now come to honor those who have truly excelled.

"For the past few days, the competition here at Vandenberg and last week at McConnell has been tough and demanding. It was made that way intentionally, and each of you can be proud of your performance. For those who will be taking home trophies, there can be no doubt that you are indeed the very best."

"However, it is important that we not lose sight of one of the major objectives of Olympic Arena. The skills and professionalism you demonstrate during this competition send a clear unmistakable message to those throughout the world who challenge us that the men and women of SAC mean business."

"Our country is entering a very critical period in its brief history as a world leader. During the next five years, the U.S. will be working hard to correct the decade of neglect of its strategic deterrent forces. But, it will take time and in the interim, it will fall on you, as it has so often in the past, to make up the difference with your know how, your hard work and your dedication. But I know you can do it, otherwise you wouldn't be here and a part of this group of professionals.

"On behalf of the men and women of Strategic Air Command, I congratulate each of you on your fine showing during the competition. The command is proud of you."

Making his point clear that the 381st SMW is number one is SSGt Thomas W. Oglesby. Spirited cheering among the nine missile wings became much a part of Olympic Arena '80 competition.

UPDATE ON THE DIGITAL BOMB NAV SYSTEM (DBNS) FOR THE B-52D

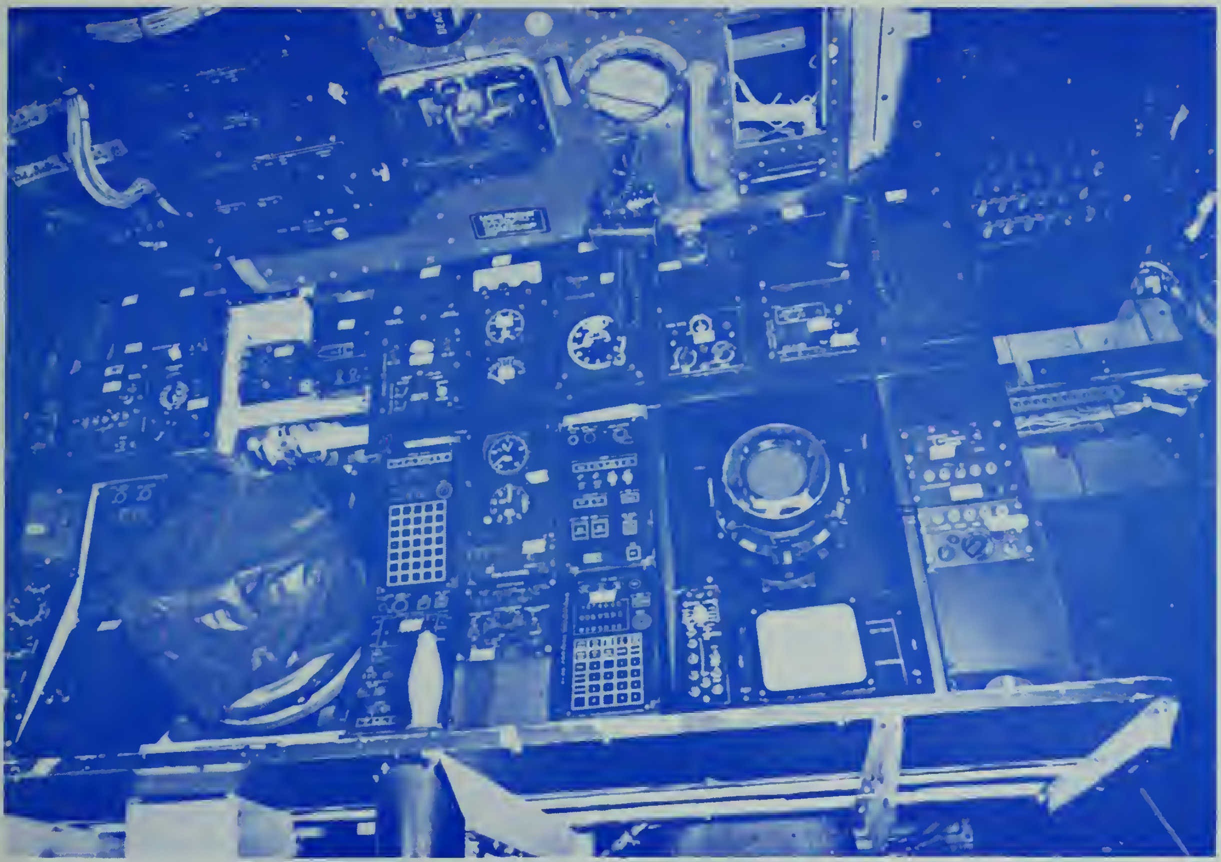
r&d corner

Captain Richard S. Roszak,
HQ SAC/XPHN

The last time the R&D Corner looked at the DBNS program was back in August 1978 when we were about to go on contract for modification of the entire B-52D fleet. Well, the contract was signed and since then the system has gone through a detailed critical design process and the final product is being installed on the first few aircraft. Let me back up a bit and refresh everyone's memory on how the program got here and then we'll take a look at what the system is all about.

In late 1976, Warner-Robins Air Logistics Center notified SAC that the B-52D's ASQ-48 bomb nav system would be logistically nonsupportable by 1980. A $300,000 12 month feasibility demonstration was contracted with the Federal Systems Division of IBM to investigate the possibility of a near term replacement BNS using on-the-shelf technology. The test system was a digital processor interfaced with an Automated Offset Unit (AOU) and a Honeywell INS, the SPN/GEANS (Standard, precision Navigator/Gimballed Electrostatically-Suspended Aircraft Navigation System—now you know why we just call it SPN).

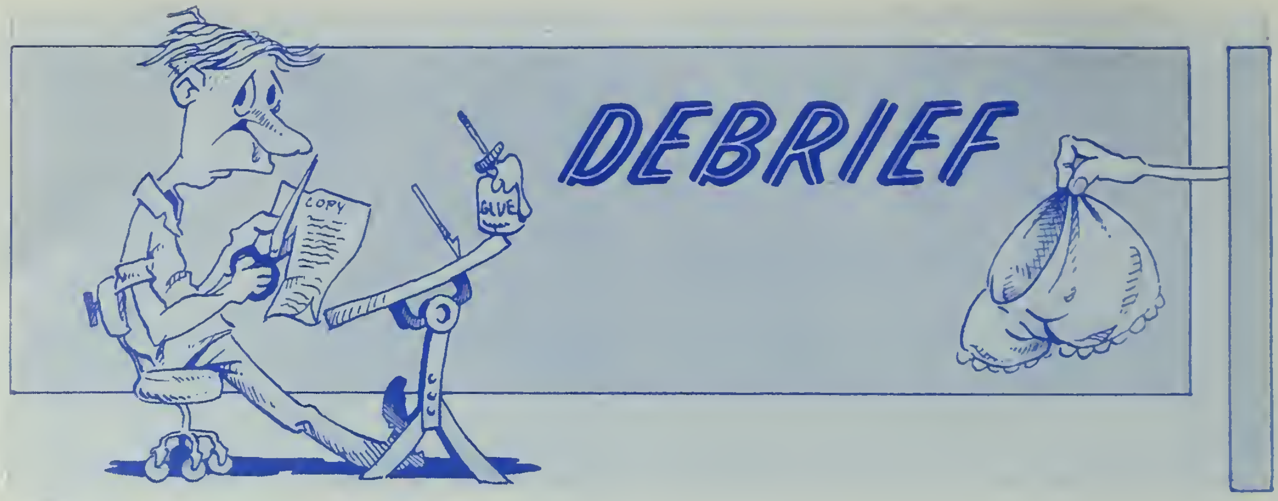
In October 1977, the system began an intensive six month flight test with combat ready crews of the 7th Bomb Wing at Carswell AFB, TX. Normal training profile sorties were flown, as well as Red Flag missions, Busy Observer flights, weapon drops with both MK 82s and mines, and a flight over the North Pole. The test results exceeded expectations and the Air Force went on contract with IBM on 3 August 1978.



Since then, the apppearance of the system has changed drastically and the capabilities of the DBNS have been improved. The crew interfaces with the system through three new control and display units, one on each side of a 10 inch scope, and the third to the left of a five (5) inch scope. The BNS Control Unit (BCU), to the left of the large scope, contains all of the system mode controls: Bomb, Track, Auto-fix, ACL, Memory Point, etc. The BNS Data Unit (BDU), on the right of the RN's scope, contains digital read-outs of flight data including wind velocity, time-to-go, and PDI deflection, and also has a keyboard for entering or updating information in the computer. The last major panel, the Navigation Control Unit (NCU), contains the system power and data loading controls and another keyboard for updating and entering INS data. A fourth panel, the Magnetic Tape Unit (MTU), is located above the 10 inch scope and is used to load all mission data into the computer via magnetic tape cassette.

The new system can do everything that the old BNS could do — and more. The N-1 compass and APN-108 doppler are now backup sensors to the SPN. A new electronic BRIC has been added to allow release of internal weapons at more varied and exact intervals. Synchronous Drift Angle Station Keeping (DASK) will be possible as the system computes time-to-go and degrees-to-turn for positioning the aircraft at the desired offset distance from the lead aircraft. This tactic can also be accomplished either manually by the pilot through his PDI, or automatically in Second Station. By calling for zero offset, the pilot will also have a PDI readout to a rolled-out tanker, a real benefit in IFR conditions. (By the way, both the pilot and copilot will get new PDIs with digital readouts for degrees and time, and turn lights instead of the old needle display.) Yet another new mode is Track Maintenance, where a desired track is entered and the system corrects to track automatically. All the new modes will allow for more efficient and accurate navigation system management. Mission planning emphasis will change as most flights will use canned profiles, and in-depth study of all fix points will be required, not just target offsets.

Sounds like a lot of changes for the better—and they are! The DBNS should begin a new era of capability for the B-52D. The prototype aircraft was delivered in May and both Carswell AFB and Dyess AFB will begin conversion by October this year. Look out Bomb Comp, here comes the B-52D!



THE FIRST B-52 CHECKRIDES

IN the June issue we mentioned that 25 years ago the first B-52B was delivered to Castle AFB. At that time, three crews from the 329 Bomb Squadron were selected to train in the new bomber.

On 25 July 1955, the first SAC B-52 crewmembers were given their 51-19 and 51-4 checks (standboard). Major Batson and his crew were evaluated by Col Patrick D. Flemming. Since there were no qualified navigators, EWO's or gunners, Col Flemming completed the qualification forms for the entire crew.

Major Batson's crew was not originally scheduled for the first check. Major Mark Hill and his crew were to fly their check on the 25th, however, aircraft maintenance problems prevented their launch. Col Flemming then elected to climb on board with Maj Batson and complete his crew. This possibly was the first no-notice check given in the B-52. Major Hill's crew completed on the 26th and the third crew, Maj "Frenchie" Bennett, completed on 27 July.

Brig Gen William E. Eubank, Jr., 93d BW commander, attended the premission briefings. In his remarks and with a smile, he chastized several of the crewmembers for being "out of uniform." Several of these prospective B-52 crewmembers, including Major Batson, held spot promotions as B-47 crewmembers. When they landed from their successful checks, they immediately lost their "spots." This was probably one of the few times a SAC crewmember knew that by doing the job right the reward was a demotion.

The B-52 checkout program continued with crews of the 329 BS, 330 BS and 328 BS becoming qualified in this order. Col Flemming was later a fatality in the first B-52 crash on 16 February 1956. He was completing the qualification of Maj Stenvsky and his crew from the 328 BS at the time. Thanks to: Oscar Senft, R Nav on Maj Batson's crew.

1979 SAFETY AWARD WINNERS

USAF FLIGHT SAFETY PLAQUES

6th Strategic Wing
28th Bombardment Wing
42d Bombardment Wing
97th Bombardment Wing

USAF MISSILE SAFETY PLAQUES

5th Bombardment Wing
28th Bombardment Wing
42d Bombardment Wing
319th Bombardment Wing
44th Strategic Missile Wing
91st Strategic Missile Wing
351st Strategic Missile Wing
381st Strategic Missile Wing

USAF NUCLEAR SAFETY PLAQUES

28th Bombardment Wing
44th Strategic Missile Wing
91st Strategic Missile Wing
416th Bombardment Wing

There's more to the SMO story.

In our coverage of the site maintenance officer seminar held in Nov 79 at F. E. Warren we failed to acknowledge that the SMO program had been viable and ongoing for over a year in the 90 SMW. The people of the 90 SMW certainly deserve credit for their hard work and leadership in the SMO area. Ed.

Of Words and Meanings

TRAINING - EDUCATION

Maj Richard Szafranski
H Q SAC, Offutt AFB

Ground training, flight training, cockpit procedural training, and even additional training are recognized as important prerequisities to successful mission accomplishment. Some people believe that if you have enough training, successful mission accomplishment is assured. Yet, nearly every week some well-trained crew member disproves this theory. How can this be?

It can be because the objective of training is education. The distinction between education and training is not so fine a one as you might imagine. *Education* comes from the Latin *educare* meaning "to lead forth or to bring out." *Training*, on the other hand, is derived from the Latin *trahere* meaning "to pull or to drag." Training is directed toward the communication of some manipulative or cognitive skills, so that they can be properly duplicated when required. Thus, it is repetitive and activity directed. We practice the procedures for air refueling or synchronous bombing over and over until we can duplicate the skills required for these activities. Similarly, we repeat bold face emergency procedures over and over until we can duplicate the words on command. We are trained when we can duplicate activity or recall procedures with the frequency and accuracy required. It is a simple matter to evaluate our proficiency (from the Latin *proficere,* meaning "to advance or to move forward") by a simple sampling: the more times you've done it or the more accurately you recall it, the better trained and more proficient you are. But that is not enough.

Education differs from training in that it requires that you "draw out" of the activity or words an understanding of their significance within some conceptual framework. Training will drag you to some rudimentary understanding of the significance of words or activities, but may not help you cope with novel situations. Thus education requires two things of you that training does not: your desire to understand and not merely duplicate and your ability to priortize within and relate to something conceptual. The single concept within which all things for crewmembers are related and integrated is survival. You must survive to damage the enemy. This concept is translated into activities that define your mission: bombing, suppressing threats, turning keys, refueling, communicating, navigating and timing, For flyers, both you and the aircraft must survive to damage the enemy. You must understand not only the activities you engage in, but also the mechanical or electronic systems which support the activities. When confronted with a novel situation you must understand what threatens your survival and what threatens the accomplishment of the mission. Firmly grounded in that understanding, you can then act as you have been trained to act to insure survival and mission accomplishment. You can also differentiate between wartime and peacetime and understand which behaviors appropriate in combat are out of place in peacetime. Like the tech order says: "This manual provides the best possible operating instructions under most circumstances, but it is a poor substitute for sound judgment. Multiple emergencies, adverse weather, terrain, etc., may require modification of the procedures." A trained crewmember recalls reading that, an educated crewmember understands what it means.

USING THE INS TO PRECOMP

Maj Edgar L. Bornmann
CFIC, Carswell AFB

One of the enjoyable aspects of being an instructor in CFIC is getting to meet a large cross section of like specialities, both active duty, guard and reserve. As always happens, when such a cross section has a meeting of minds, techniques and ideas readily flow. New things are learned and old ones resurface. It is the responsibility of our instructor corps to get out the information to the troops and keep them abreast of new events. This article is intended to do just that.

The KC-135 is steadily being modified with the inertial navigation system and we are finding more ways to utilize the equipment than just going from point A to point B. One such use is for precomping. It sounds difficult at first, but with a short review of celestial theory it becomes simple.

The fundamental idea behind the celesial precomputation is solving the astronomical

Zenith: The point on the celestial sphere directly over the assumed position. (Figure 2)

Celestial North Pole: The point on the celestial sphere directly over the earth's north pole. (Figure 2)

Subpoint: The point on the earth directly below the celestial bodies' position on the celestial sphere. (Figure 1 & 2).

Astronomical Triangle: The co-latitude, co-declination, and co-altitude. (Figure 1)

ZN: The bearing from zenith to celestial body (angle from true north).

Zenith Distance: Equal to co-altitude, but in miles not degrees (remember one minute of arc equals one mile in theory).

The information we are seeking for our precomp is the HC or Altitude and the ZN or azimuth. The azimuth is the true bearing from the assumed position to the subpoint of the body and altitude (HC) is equal to 90 degrees minus the co-altitude. Co-altitude is equal to 90 minus the zenith distance. The zenith distance must be converted to degrees so you must divide that distance by 60. This will give you degrees and tenths. The tenths must be converted to minutes.

Now that we have reviewed our celestial theory, how do we physically use it in the INS? First select two waypoint positions that are not being used and turn the data selector to waypoint. Position the waypoint thumbwheel to one of the points chosen and enter the latitude and longitude of your assumed position (or DR for shorter intercepts). Next, position the waypoint thumbwheel to the second position and enter the body's declination as latitude coordinates and the GHA of the body as longitude coordinates. **Note:** If the GHA is greater than 180 degrees then subtract the GHA from 360 degrees and insert as east longitude. If the precomp is for a star remember to add the GHA of Aries to the SHA of the star to get the GHA of the star.

Now we must press the waypoint change key and load the assumed position or DR in the "from" side and the subpoint in the "to" side.

Next turn the data selector to DIS/TIME and read the zenith distance or co-altitude. This distance must be divided by 60 to get degrees (remember to convert the tenths to minutes). Subtract the results from 90 degrees or 89-60 and you have the HC. Another technique is to subtract the zenith distance from 5400 and then divide by 60 to get the same answer. Now press the insert key, turn to DSRTK/STS and read the azimuth or ZN.

This procedure works and is not as lengthy as it sounds. The results can be obtained in less than three minutes. If you use this method to precomp remember you still must comply with SACR 50-4 Vol I which states "if an electonic calculator is used, record the following data: Fix time, body/bodies, assumed position, shot time, ZN, HC, and HO on the SAC Form 289, Celestial Precomputation."

To make all this even simpler I have included the following step by step checklist. Fly the aircraft—on course.

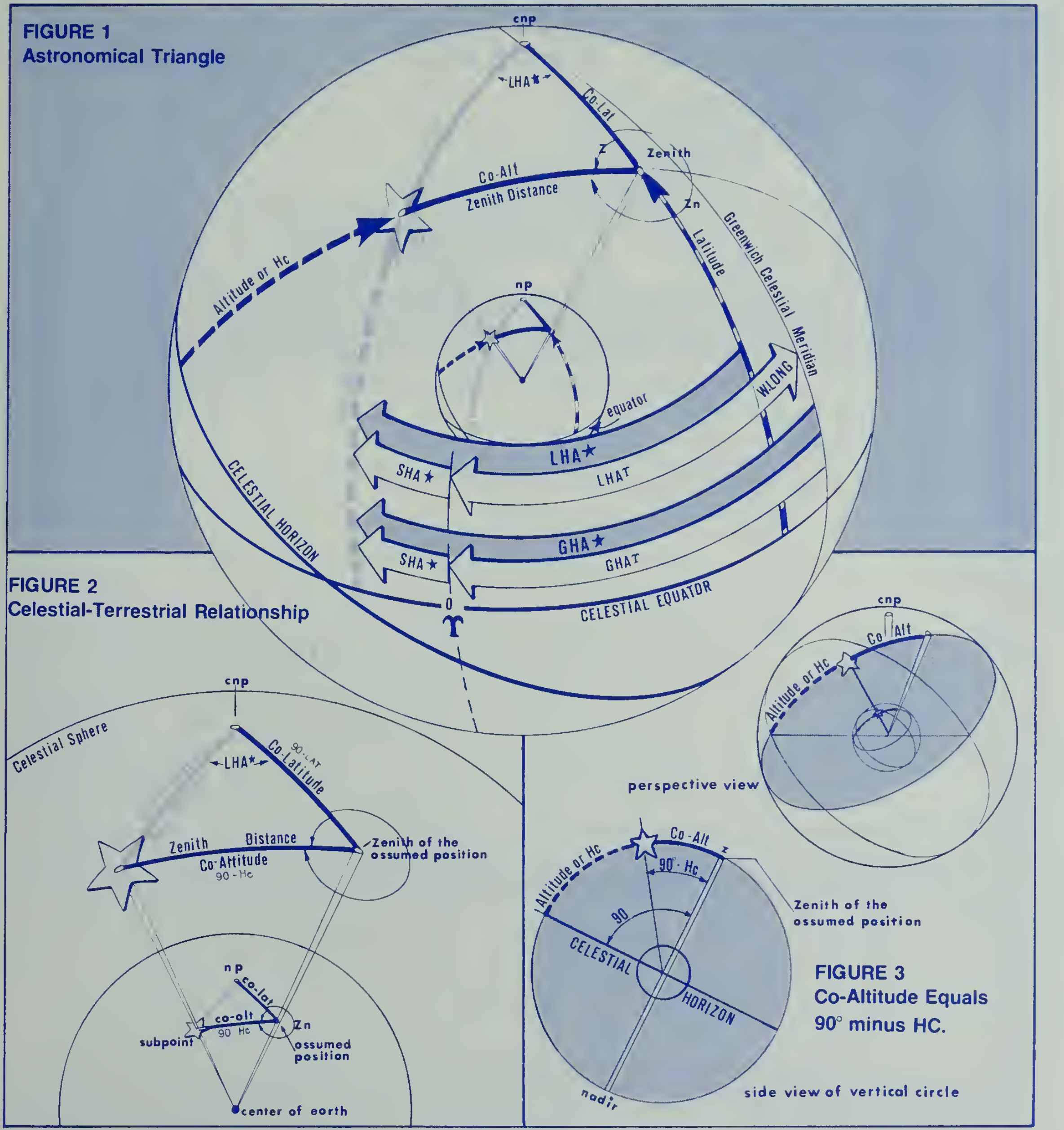


FIGURE 1
Astronomical Triangle

FIGURE 2
Celestial-Terrestrial Relationship

FIGURE 3
Co-Altitude Equals 90° minus HC.

INS PRECOMP PROCEDURES

1. Assumed position or DR position for shot time-insert.
   a. Data Selector-Way PT.
   b. Waypoint/TACAN Thumbwheel-Set (Select a waypoint not being used).
   c. Position Coordinates-Insert
2. Subpoint of the Body-Insert
   a. Data Selector-WAY PT.
   b. Waypoint/TACAN Thumbwheel-Set (Select a Waypoint not being used).
   c. Insert bodies declination as latitude.
   d. Insert bodies GHA as longitude (If GHA is greater than 180° subtract the GHA from 360°and insert as East Longitude).

   NOTE: For a star, add the GHA of Aries to the SHA of the star before inserting GHA.
3. WAY PT. CHG. KEY-Press
4. KEYBOARD-Load desired waypoints (From the assumed position "TO" the subpoint).
5. DATA SELECTOR-DIS/TIME
   a. Derive altitude from distance (by dividing distance by 60 to convert to degrees and subtracting the result from 89°60′. Before subtracting, be sure to convert the tenths of degrees from the division into minutes).
6. INSERT KEY! PRESS
7. DATA SELECTOR-DSRTK/STS
   a. Read Azimuth of body in desired track.

(ALT: TAKE DIS FROM .5400 (DIST IN 90°) AND DIVIDE BY 60 TO GET ALT OF BODY). Can be used for ground sextant check.

Tales of a Wing

Continued from Page 7

attitude about SAC and the 135 mission. The new tanker represented a challenge: we knew we could take on the mission of SAC even though the Guard work force is essentially part-time.

Pittsburgh happens to be the site of one of the better maintenance schools in the country and many of our mechanics are graduates of this school in addition to military training courses. Lt Col James B. Cleland, deputy commander for maintenance, stated that no engines have failed in flight since the unit changed to the 135s. Getting quality mechanics is not a problem for the unit which currently has a waiting list. Col Cleland also credits the attitude of the unit for its safety record. "A long time ago," he reminisced, "it was like a flying club, but we've come a long way. Safety and training are essential and we show this in the way we work and fly today."

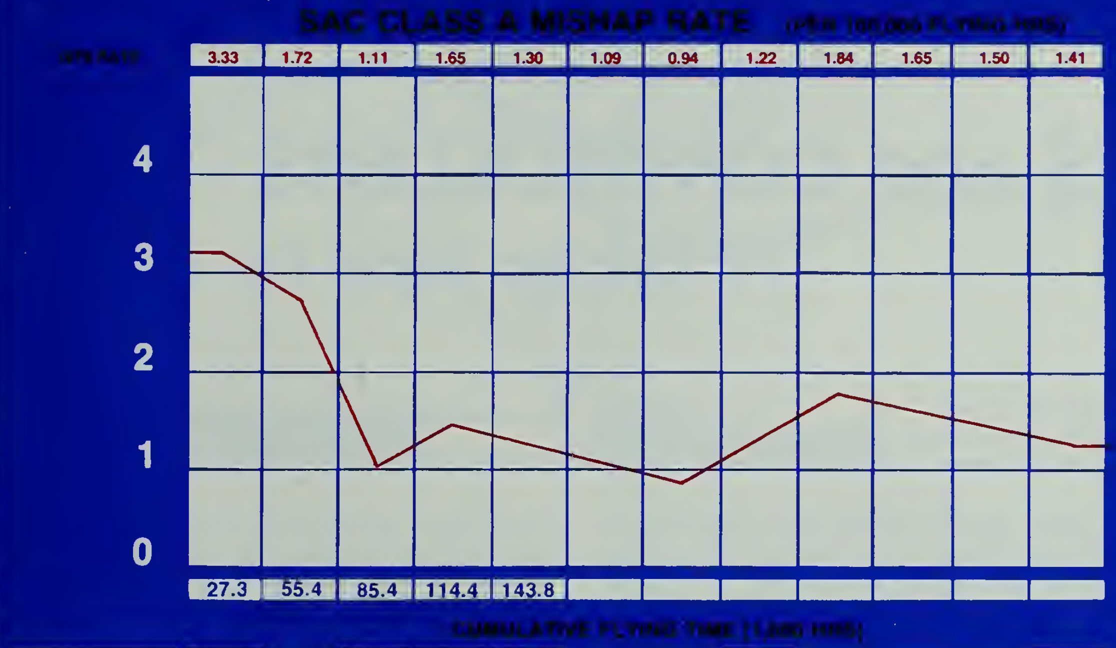
The 171st flies its missions from a major international airport. Newly assigned pilots quickly learn that there are few long final approaches at charted and stabilized speeds, few repeated radio calls for inattentive pilots, no wide runways with overruns, and no local flying area in which to hide and learn. MITO under the control of FAA tower controllers calls for complete attention to detail. Most of the unit's air refueling training is conducted in the heart of the most densely traveled air route sectors in the world.

Perhaps it is this environment that makes the 171st so safety conscious. All the pilots know the diverse challenges of approaches in this aircraft saturated area. It is not uncommon to see an incredible mixture of military and civilian airplanes, Cessna 150 and up, jockeying for their own little piece of air space. Pittsburgh is not the place for a complacent flyer as pilots quickly learn. We are forturnate that many of our aircrews fly in the civilian community as well. In this area where ceilings and visibility can plummet within minutes, a sharp aviator who is on top of the situation is not a luxury, but a necessity.

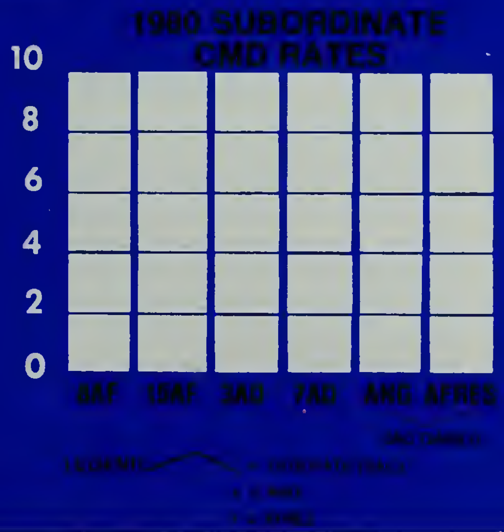
Maybe it's all of these things which have combined to give the 171st its "do the job right" attitude. The members of the unit do their tasks with the simple understanding that it takes all of us to get it done. The 171st is professional, and we're here because we want to be. With the exception of a few new enlistees, nearly everyone has satisfied his military obligations. There are good things to be said about working with the same people every day, as is so often the case in a Guard unit.

"The stan-eval program is the backbone of our safety," explains Brig Gen Peter R. Phillipy, commander of the 171st. "There's just no getting around doing it by the book; that's the only way it works You can't maintain this kind of record without doing something right, and that something is the manner in which the stan-eval program is managed." Professionalism is also a key word in describing the members of the 171st. There's an obvious pride in the unit and the mission it serves. Frequently people throughout the 171st work long and hard to keep everything running smoothly. Whether standing in a stream of hydraulic fluid on a ramp in Germany, or working in freezing rain to change an engine, the people of the 171st perform their job with pride.

1980 Flying Safety Rate



MISHAPS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1979	1	0	0	1	0	0	0	1	2	0	0	0
1980	0	0	0	0	0							



MISHAP STATUS

BIG INSTRUMENT

PILOTS and CONTROLLERS it takes two to tango

Captain James M. Sullivan
1st Combat Evaluation Group
Barksdale Air Force Base, Louisiana

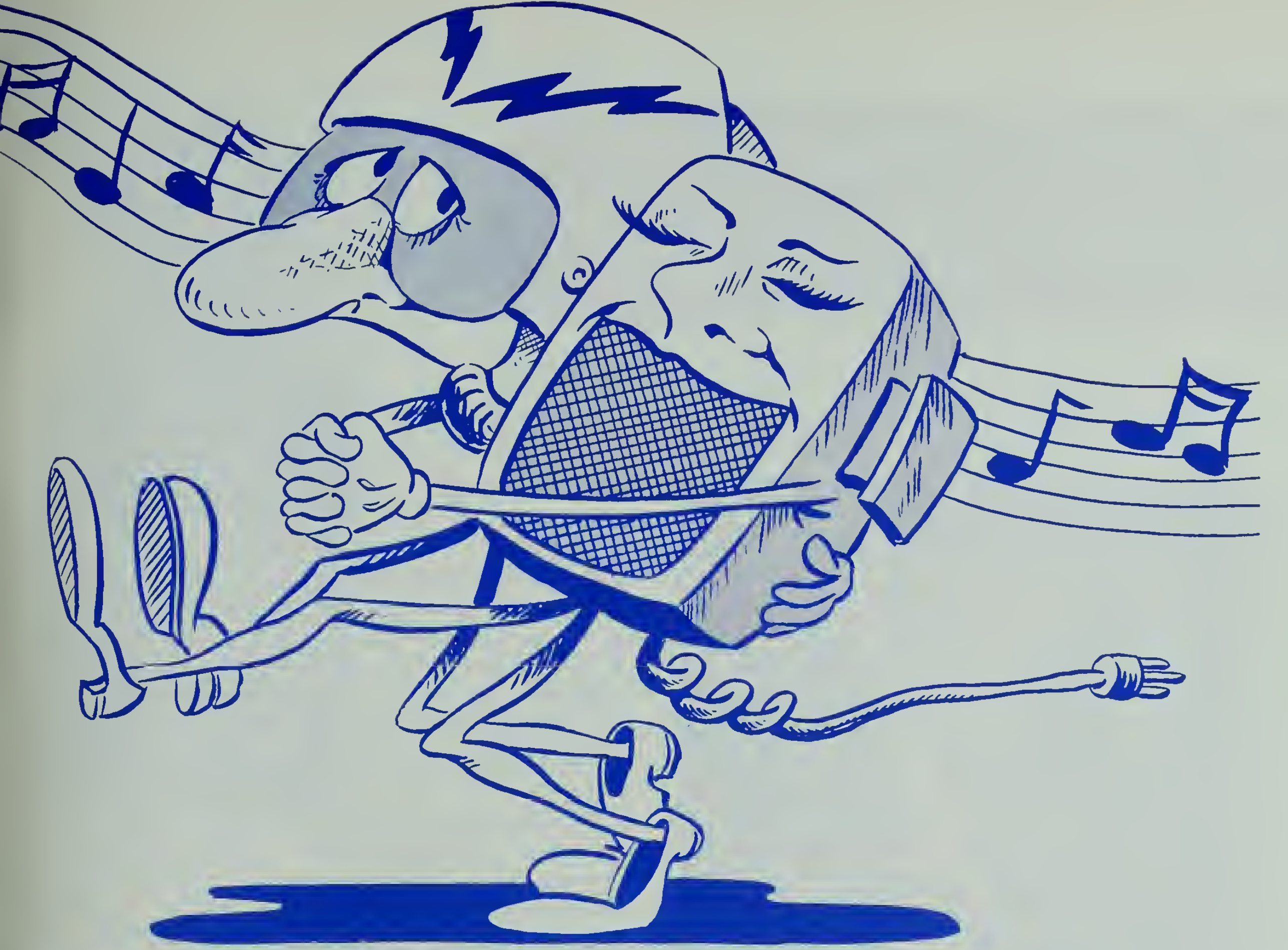
Last year we discussed pilot responsibility in the radar environment. The subject is a broad one which deserves further treatment. We can't think of the pilot and his responsibility without also considering the reciprocal tasks and responsibilities of the Air Traffic Controller. While the pilot is the final authority for the safe conduct of flight, our complex traffic structure requires and provides for a shared tasking between pilot and controller. To help you better understand the environment in which you fly, this article will discuss the mutual and separate responsibilities of the pilot and controller. A succeeding article will then discuss some ATC services available to you.

The Airman's Information Manual (AIM) outlines pilot and controller roles. The list of responsibilities is fairly comprehensive and is drawn from source documents such as the Federal Aviation Regulations (FARs) and the Air Traffic Control Handbook 7110.65. The AIM emphasizes the importance of the shared responsibilities of pilots and controllers, noting that "the responsibilities of the pilot and controller intentionally overlap in many areas providing a degree of redundancy. Should one or the other fail in any manner, this overlapping responsibility is expected to compensate, in many cases, for failures that may affect safety." Therefore, if pilots and controllers properly fulfill their roles, there is a better than even chance that air traffic system errors and malfunctions will not affect the safe conduct of your flight.

In order to make such a system work, the pilot must understand what is expected of him and what he may expect from the ATC controller. The controller's first priority is to provide aircraft separation and radar safety advisories. Compliance and communication are your keys as pilots in making the system work. Let's examine some specific responsibilities for clearances, advisories, and visual separation.

CLEARANCES

The controller is responsible for issuing the clearance under IFR. He does this by following criteria established in the Controller's Handbook. Further, he assigns altitudes at or above the minimum altitudes in controlled airspace. The pilot, on the other hand, insures that he fully understands the clearance (read back, if necessary) and that the clearance is fully acceptable from a safety standpoint. For example, a clearance to climb to 5000′ MSL in IMC without an expected further climb might very well be unacceptable for fuel consideration in the event of radio failure. In this situation, the pilot should request an amended clearance



("Expect FL 310 10 minutes after departure"). Once the controller has issued a clearance, the pilot should comply unless an emergency dictates otherwise. If deviations are necessary, notify the controller immediately and he will issue an amended clearance.

ADVISORIES/SEE AND AVOID

The controller will issue a *safety* advisory any time he judges an aircraft under his control is in unsafe proximity to obstructions, terrain, or another aircraft. The pilot should understand, however, that controller work load, traffic volume, radar limitations, etc., may affect his ability to observe an unsafe situation developing, such as an approaching uncontrolled aircraft. The pilot, therefore, must adhere to safe operating practices, while observing his MEA, MOCA, DH, MDA, and Emergency/Minimum Safe Altitudes.

The controller will issue *traffic* advisories when higher priority duties permit. He will not necessarily provide avoidance vectors. If the pilot believes the situation warrants, he should request the service from the controller. On the other hand, if the pilot observes the traffic, he should so inform the controlling agency. Remember, not all aircraft will appear on the radar display. The controller provides all the help he can, but the pilot must do the rest. Finally, when operating in VMC, the pilot is responsible to "see and avoid" other traffic, terrain, or obstacles regardless of the type of flight plan. The controller will provide radar traffic information when his work load permits.

VISUAL SEPARATION

The controller can apply visual separation in a terminal area when he has both aircraft in radar contact, or he may instruct a pilot who sees another aircraft to maintain visual separation from it. (AIM, para 411) When a pilot accepts instructions to follow another aircraft, he now accepts responsibility to *avoid* and *follow* the other aircraft (as required) and to maintain prescribed wake turbulence separation.

Our discussion thus far has centered on several areas where pilot and controller responsibilities overlap to some degree. This redundancy is designed to provide for safe operation of all flights. In the following article, we will discuss some services available to the pilot which are designed to smooth air traffic and to reduce clearance and communication difficulties. Knowing what services are available, as well as their limitations, and what responsibilities you and the controller must fulfill will assist you in operating more comfortably in the ATC environment.

PROFESSIONAL PERFORMERS

TITAN CREW

Crew E-049, 308th SMW, is designated TITAN Crew of the Month and includes MCCC 1Lt Richard L. Vouk, DMCCC 2Lt John R. Keller, MFT SrA Janice M. Herron, and MSAT A1C Michael A. Long.

During alert, the crew received indication of fire in the launch duct. The crew then determined the engine sprays, launch duct sprays and pump P-1 were on. A short time later, they received hazard indications for the fuel vapor duct, explosive fuel launch duct and vapor silo equipment area. The MSAT and MFT made a cautious penetration into the equipment area and disabled the sprays. This allowed the crew to turn pump P-1 off extinguishing all hazard indications.

PILOT OF THE MONTH

Captain Jon Bisher, a B-52D instructor pilot assigned to the 4018th CCTS, Carswell AFB, demonstrated superior airmanship during a recent inflight mishap. His alertness saved an aircraft from destruction and probably saved the lives of the 10 aircrew members on board.

Captain Bisher and his instructor crew were flying a CCTS crew training mission with a student crew. They had returned to Carswell to accomplish scheduled local transition training prior to the final landing. The student pilot was making his turn to final from a visual pattern when Captain Bisher began to "sense" an excessive sink rate. Correct airspeed was being flown so Capt Bisher took control of the aircraft and executed a go-around. Aircraft altitude was approximately 500 feet AGL when the go-around was initiated. Constantly changing stabilizer trim requirements and accompanying airspeed changes soon led to the discovery that the wing flaps were cycling without command between the full down and the full up position. If the planned full flap approach had been continued loss of control would have been highly probable. The crew reviewed options available, and pulled the normal flap control circuit breaker when the flaps reached the full down position. This removed power from the flap circuitry and the flaps remained full down. A normal full stop landing was made without further incident.

Postflight inspection revealed FOD in the flap control actuator which would not allow power to be removed for the UP side of the actuator. This allowed an uncommanded flaps up signal to be continuously sent to the flap drive motor. Captain Bisher clearly demonstrated superior professionalism and airmanship throughout this event. His instinctive reactions were all that prevented this mishap from being a fatal mishap rather than a situation with high accident potential.

MAINTENANCE AIRMAN

SrA Deborah L. Bondy, 320 AMS, Mather AFB, is SAC Maintenance Airman of the Month.

Recently, the instrument shop was tasked to perform a TCTO on all assigned B-52G aircraft involving the installation of a standby altitude indicator. The modification was listed as requiring a minimum of eight hours to complete. She applied herself to the TCTO by analyzing the maintenance procedure given for installation and determined that a new objective approach was necessary. Utilizing her technical expertise, she accomplished the first modification, refined procedure and completed the next modification. She then taught all personnel within her shop how to accomplish the modification.

MAINTENANCE NCO

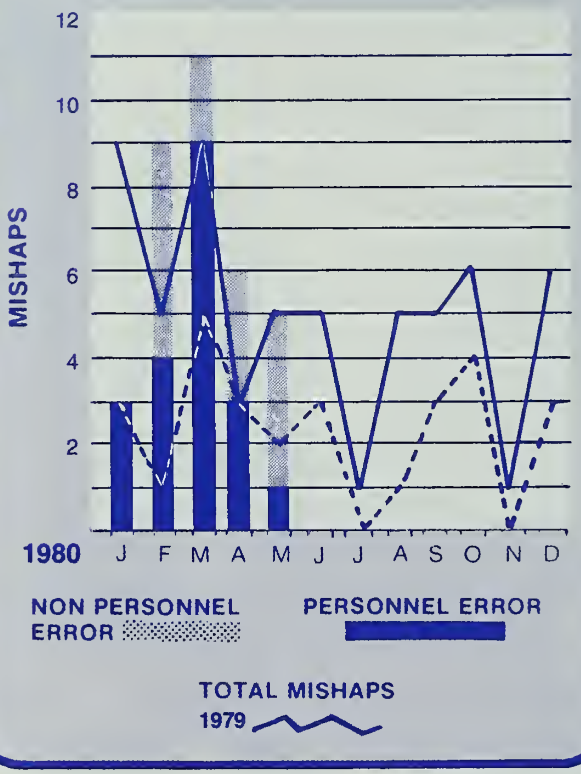
SSgt Michael R. Romanick, 308th SMW, Little Rock AFB, is SAC Maintenance NCO of the Month. As NCOIC of component repair, servicing section, he earned the reputation of being the best organized manager in his entire squadron. Regardless of the work load of his section, he always responds to maintenance requirements rapidly and professionally. He recently had a suggestion and tech order change approved deleting the requirement for Titan units to purchase an expensive ohmmeter. He discovered that an existing meter used by the electronic shop would suffice. He is a dedicated noncommissioned officer and a valuable asset to SAC and the United States Air Force.

MINUTEMAN CREW

Capt Donald H. Stuhlman and 1Lt Gary C. Weaver, Crew S-130, 341st SMW, are named MINUTEMAN Crew of the Month. The crew was directly responsible for twice the number of LF's while maintaining coordination with five on-site maintenance teams. While insuring compliance with weapon system safety rules, an apparent explosion jolted the LCC throwing the deputy across the room. The crew quickly determined the shock isolation system had ruptured and then located the point of rupture. Their cool reaction prevented further EWO degrade and allowed uninterrupted monitoring of flight security and maintenance activities.

Missile Mishap Report

DOD CLASS A, B and C



A SRAM DIAPER CHANGE

A loaded SRAM launcher was exposed to JP-4 fuel contamination requiring the launcher to be unloaded and missiles removed. Two missiles were cleaned and the W17P6 cable was replaced. The launcher was thoroughly cleaned and operationally checked prior to returning to service. A defective petcock seal in the aircraft mid-body sump pump drain caused the fuel contamination.

DON'T DIG YOURSELF A GRAVE

A CE team was removing a monument at a launch facility with a grade-all excavator. The team chief discovered a conduit containing two cables had been severed by the excavator. No status change was received by the missile combat crew so it was assumed they had hit an old unused conduit from a previous construction project. The removal was accomplished and upon departing, they could not set the outer zone security system. Upon further investigation and digging, it was determined that the southeast security antenna cable and conduit had been severed. It is extremely important that prior to digging anywhere, the appropriate agencies be informed to insure the dig site is free of all cables. It could very well save someone's life in the case of high voltage cables, not to mention cutting a site out of commission and degrading site security.

THE CABLE CUTTING WORK CAGE

During operation of a work cage by a maintenance team, one of the lower work cage wheels snagged the W955 electrical cable which monitors pressure on the liquid springs suspension system. The cable was severed by the movement of the work cage and required replacement. Appropriate caution should be stressed pending receipt of a technical order change that provides for taping the W955 to another cable bundle to prevent damage.

GOT A SPARE BATTERY?

An EWO effectiveness diesel run was performed at a launch facility. Upon completion of the diesel run, the main power circuit would not reset to restore commercial power to the site. Troubleshooting revealed an interval failure of the B phase portion of the circuit breaker. While awaiting a replacement circuit breaker, the site was operating on diesel generator power. Eventually, a high temperature condition caused the diesel generator to shut down and the facility transferred to battery power. A maintenance team discovered that the generator water pump shaft had broken and the seals had failed causing a loss of coolant. When the team attempted alternate launcher entry procedures, the secondary door was lowered only six inches when the electro-mechanical linear actuator brake and manual drive mechanism ceased to function. During this time, repairs had been made to the diesel generator and a successful reset of the main power circuit breaker was accomplished; however, circuit breaker 11 kept tripping when power was applied. It was some time later that battery power failed and the sortie reported a DC NO-GO. The following day, LF forced entry procedures were accomplished. Upon entry, LF emergency shut down was performed. Twelve LF batteries were damaged and required replacement.

SAC SAFETY SCREEN

920 AREFS, Wurtsmith Crew R-142: P Capt Paul M Gutman, CP 1Lt Edward G Redmon, N 1Lt Lester S Yagi, BO SrA Michael J Fryt

379 BMW, Wurtsmith Crew S-30: IP Capt Robert M Cook, CP Capt Craig A Alderman, RN Maj Lawrence O LaFever, N Capt Richard P Ammons, EW Capt James R Evans, AG SSgt Donald G Ferguson

128 ARG, Gen Mitchell Fld, Milwaukee, Wisconsin: IP Maj Robert G Harshaw, CP Capt Donald M Catalano, N Capt Lon M Hansen, BO MSgt Earl N Gauerke

93 BMW, Castle Crew E-108: P Maj Ernest S. Wilde, CP Capt Richard W Henry, N Maj Lee R Ketchum, BO SSgt Keith E Sullivan

319 BMW, Grand Forks Crew E-105: P Maj George W Niece, CP 1Lt David G Cole, N Capt Donald N McDuffee Jr, BO Sgt Kenneth L McCarthy

97 BMW, Blytheville Crew E-16: P Maj Robert L Griffee, CP Capt Gilbert D Johnson, RN Maj Carl A Townsend, NN 1Lt Paul M Bunning, EW Maj William J Noel, AG TSgt Michael L Kissell

97 BMW, Blytheville Crew E-14: P Capt Ronald A Menees, CP 1Lt Charles E Lee, RN Capt Elmore Jackson Jr, NN 2Lt Robert W Edwards, EW Capt George M Hammond, AG SSgt Richard A Watson

410 BMW, K I Sawyer Crew S-104: P Capt Richard L Haag, CP 1Lt Joseph M Marchino, N Capt Kevin R. Hall, BO SrA Joseph M. Brantley

410 BMW, K I Sawyer Crew E-26: P Capt Kenneth C Seitz, CP 1Lt Kenneth E Berggren, RN Capt George P Shannon, N 1Lt Lynn J Stone, EWO Capt John A Pompeo, G SrA Timothy A Picardi

407 AREFS, Loring Crew E-163: P Maj Harry L. Brodock, CP Capt Clarence J Fennell, N Capt Thomas C Blow, BO A1C Walter D Pitts

97 BMW, Blytheville Crew S-103: P Maj Gary P Vanovermeiren, CP Capt Michael S Griffith, NN Capt Laurence C Vilet, BO TSgt Jerry W Rhodes

97 BMW, Blytheville Crew E-124: P Capt Charles R Johnson, CP 1Lt Randall L Roth, NN 1Lt Glenn Vera, BO Sgt Edward L Mikell

68 BMW, Seymour Johnson Crew E-06: FP Capt Robert D Moulds, CP 1Lt Gregory Gorniak, RN Capt John L Vonloh, N 1Lt Orval L Zummach Jr, EW 1Lt Harold L Petersen, G TSgt Nemecio Abaya

68 BMW, Seymour Johnson Crew E-113: P Capt Steven R Cotterman, CP 1Lt Dewayne A Rudd, N Capt William A Griswold, BO SSgt Stephen A Sweet

90 SMW, F E Warren Crew R-067: MCCC 1Lt Viktor I Jonkoff, DMCCC 2Lt Thomas J Talbot

321 SMW, Grand Forks Crew S-110: MCCC Maj Thomas O Carmichael, DMCCC 1Lt Marcus A Livingston

351 SMW, Whiteman Crew E-144: MCCC 1Lt Sterling A Johnson, DMCCC 2Lt Joseph A Diliberto

The SAC Safety Screen is an honor roll of SAC's most professional crews. To gain listing on the Screen, crew members must be nominated by their unit commanders and meet high selection criteria of experience in their aircraft or missile system *IAW AFR 127-2/SS1.*

*U.S. Government Printing Office
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HALL OF FAME

TACTICAL FLYING

OVER TWENTY FOUR YEARS	
170 AREFG, McGuire (NJANG)	[illegible]
OVER TWENTY TWO YEARS	
171 AREFW, Greater Pittsburgh (PAANG)	[illegible]
157 AREFG, Pease (NHANG)	June [illegible]
OVER TWENTY ONE YEARS	
97 BMW, Blytheville	Aug [illegible]
940 AREFG, Mather (USAFR)	May [illegible]
OVER TWENTY YEARS	
307 AREFG, Travis	[illegible]
OVER NINETEEN YEARS	
151 AREFG, Salt Lake City (UTANG)	[illegible]
161 AREFG, Sky Harbor (AZANG)	Apr 61
126 AREFW, Chicago O'Hare (ILANG)	Apr [illegible]
OVER EIGHTEEN YEARS	
134 AREFG, McGhee Tyson (TNANG)	Aug 61
11 SW, Fairford	Feb [illegible]
340 AREFG, Altus	Jan [illegible]
OVER SEVENTEEN YEARS	
96 BMW, Dyess	[illegible]
OVER SIXTEEN YEARS	
19 BMW, Robins	Aug [illegible]
OVER FIFTEEN YEARS	
160 AREFG, Rickenbacker (OHANG)	[illegible]
OVER FOURTEEN YEARS	
320 BMW, Mather	Jul [illegible]
OVER THIRTEEN YEARS	
452 AREFW, March (USAFR)	[illegible]
92 BMW, Fairchild	Feb 67
OVER TWELVE YEARS	
55 SRW, Offutt	Jul 67
2 BMW, Barksdale	Aug 67
OVER ELEVEN YEARS	
5 BMW, Minot	[illegible]
OVER TEN YEARS	
42 BMW, Loring	[illegible]
141 AREFW, Fairchild (WAANG)	[illegible]
28 BMW, Ellsworth	[illegible] 70
OVER EIGHT YEARS	
7 BMW, Carswell	[illegible] 72
101 AREFW, Bangor (MEANG)	[illegible]
306 SW, Mildenhall	Apr [illegible]
416 BMW, Griffiss	May [illegible]
OVER SEVEN YEARS	
305 AREFW, Grissom	Aug 73
379 BMW, Wurtsmith	Apr 73
OVER SIX YEARS	
931 AREFG, Grissom (USAFR)	Feb 74
384 AREFW, McConnell	Mar 74
189 AREFG, Little Rock (ARANG)	May [illegible]
OVER FIVE YEARS	
43 SW, Andersen	Dec 74
OVER FOUR YEARS	
68 BMW, Seymour Johnson	Sep [illegible]
6 SW, Eielson	Dec [illegible]

ICBM

OVER FIFTEEN YEARS	
1 STRAD, Vandenberg	[illegible]
OVER FOURTEEN YEARS	
308 SMW, Little Rock	Aug [illegible]
OVER TEN YEARS	
341 SMW, Malmstrom	Jul [illegible]
OVER SIX YEARS	
390 SMW, Davis-Monthan	Jul [illegible]
OVER FIVE YEARS	
351 SMW, Whiteman	[illegible]
91 SMW, Minot	[illegible]
OVER FOUR YEARS	
321 SMW, Grand Forks	[illegible]

To [illegible] in the Hall of Fame, a [illegible]